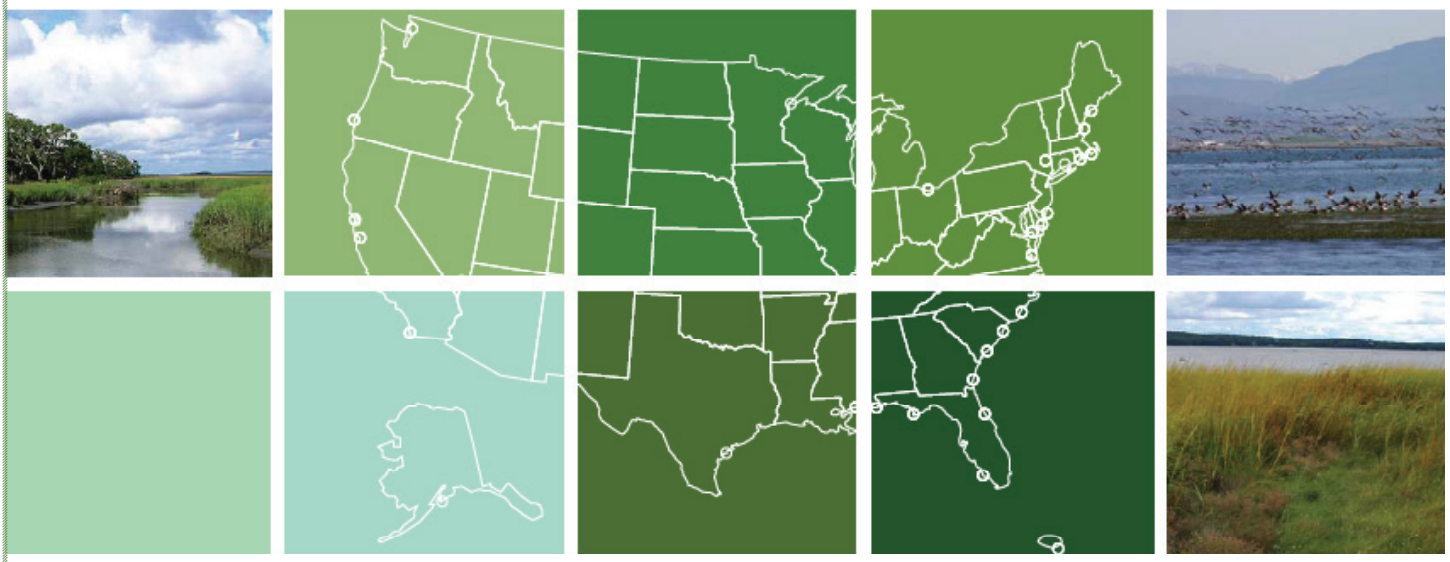
NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM SCIENCE COLLABORATIVE FY 2010 FUNDING OPPORTUNITY

REQUEST FOR PROPOSALS & APPLICATION PREPARATION GUIDE



NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM

UNIVERSITY of NEW HAMPSHIRE

january 29, 2010

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NATIONAL ESTUARINE RESEARCH RESERVE SYSTEM

LEARN MORE ABOUT THE NERRS AT NERRS.NOAA.GOV

IMPORTANT NOTE FOR ALL APPLICANTS

Letters of Intent and Full Proposals to the National Estuarine Research Reserve System (NERRS) Science Collaborative FY 2010 Funding Opportunity must demonstrate substantial involvement from NERRS staff. See page 11 of this application package for more information on this requirement.

Contact Us

If you have questions about any aspect of this funding opportunity, please send an email to one of the NERRS Science Collaborative's funding program managers; the use of email enables us to provide consistent answers to questions from all applicants: Kalle Matso, kalle.matso@unh.edu —or— Justine Stadler, justine.stadler@unh.edu

You also may ask questions about this funding program at an upcoming webinar. Logon information for these webinars will be sent by email to NERRS sector listservs in early February:

February 17, 10 AM, EST
February 17, 2 PM, EST
February 19, 10 AM, EST

March 31, 10 AM, EST
March 31, 2 PM, EST

April 1, 10 AM, EST
April 1, 2 PM, EST

I. About the NERRS Science Collaborative

The National Estuarine Research Reserve System (NERRS) Science Collaborative is a new program, designed to put NERRS-based science to work in coastal communities. Administered by the University of New Hampshire (UNH), this program uses a competitive process to identify, fund, and foster science to address local coastal management problems with broader relevance. Projects selected through annual requests for proposals (RFPs) ensure that researchers and intended users of the science work together to describe science and technology needs related to specific problems, define research questions, design and implement projects using appropriate approaches and methodology, and apply the results. For more about the NERRS Science Collaborative: www.nerrs.noaa.gov/RCDefault.aspx?ID=364

II. Request for Proposals (RFP)

The NERRS Science Collaborative seeks proposals for collaborative, science-based projects to address coastal management problems that have been identified as a priority for a Reserve and a community that it serves. Proposals must relate to at least one of the following focus areas for this RFP:

- Impacts of land use change
- Habitat change and restoration
- Estuarine contamination
- Management of stormwater and nonpoint source pollution

Given that coastal management problems related to these focus areas often are exacerbated by climate change, proposals may take climate change factors into account, as appropriate.

This RFP is open to NERRS staff, working in partnership, if appropriate, with applicants from United States (U.S.) academic, private, or public sectors. A NERRS staff member may be (but does not have to be) the Principal Investigator (PI) on the project. Researchers from institutions outside the U.S. may be included as additional investigators, but cannot be PIs. Federal employees and/or institutions are not eligible to receive funding from a grant awarded by this competition, including funds for travel. However, they may serve as unfunded collaborators on a project.

Approximately $4,500,000 will be available to fund projects. While the Science Collaborative does not place upper or lower limits on proposed budgets, we anticipate that most annual budget requests will range between $100,000 to $300,000, approximately. Proposed projects may be one, two, or three years in duration.

Projects may be anywhere on the research to application spectrum—from earliest stage research to demonstration and implementation—that connects science to decision-making to address a coastal management problem related to at least one RFP focus area. Examples of project results include data to inform best management practices, protocols, instrumentation, engineering designs, decision support systems, educational programs, and other information-based tools.

III. Funding Opportunity Goals

The primary goal of this funding opportunity is to support the development and effective use of science-based tools to make decisions that address coastal management problems related to the focus areas of this RFP. This funding opportunity also seeks to leverage the resources of the NERRS and to build the capacity of Reserves to lead collaborative research projects that engage, as appropriate, scientists, educators, trainers, and intended users of the science to collaboratively define coastal management issues and develop and implement strategies to address those issues.

IV. Collaborative Approach to Science

This RFP seeks projects that use a collaborative approach to increase the likelihood that results of the project will be used to address a specific coastal management problem. By "collaborative approach" we mean one that integrates intended users of the science in the development of the proposal and implementation of the project. When this is done

in an explicit way, with the appropriate resources, it can enhance the likelihood that intended users perceive project results as credible, relevant, and legitimate—three qualities that are often required to successfully link science to decision making. More resources on this topic are available in the Collaborative Approach to Science Primer, beginning on page 15. The following terms related to a collaborative approach appear in this document and are clarified here for applicants:

Intended users: Individuals or organizations who are most likely to use the results of the project to address the specified coastal management problem. Depending on the project, this could include those with a direct financial, personal, professional, regulatory, or legal interest in the problem or those who would be instrumental in facilitating or preventing the use of project results.

Credibility: The extent to which the project results are perceived by intended users as meeting acceptable standards of scientific plausibility and technical quality.

Relevance: The extent to which project results are meaningful for—and could be used by—intended users, given the logistical constraints they face, such as budget, level of scientific uncertainty associated with results, and timing of results.

Legitimacy: The extent to which intended users perceive the research process as unbiased and meeting standards of political and procedural fairness.

V. Proprietary Information & Intellectual Property

Disclosure of patentable ideas, trade secrets, and privileged or confidential commercial or financial information may harm an applicant's chances to secure future patents, trademarks, or copyrights. Therefore, proprietary information of this kind should be included in proposals only when it is necessary to convey an understanding of the proposed project.

Applicants must mark proprietary information clearly in the proposal, using appropriate labels, such as, "The following is (proprietary or confidential) information that (name of proposing organization) requests not be released to persons outside the NERRS Science Collaborative, except for purposes of review and evaluation."

Applicants also are encouraged to protect the intellectual property of ideas at the proposal preparation stage, if appropriate. This could allow you to talk freely about ideas and avoid the inadvertent loss of intellectual property rights. More resources on this topic are available on page 19.

VI. Application & Evaluation Process

Step 1: Read the Full Proposal Preparation guide on pages 6–11 and the Collaborative Approach to Science Primer on pages 15–18 of this document. If you have preliminary questions about the NERRS Science Collaborative's goals for this funding opportunity or the types of projects we seek, please contact us by email.

Step 2: Prepare and submit a Letter of Intent (LOI). The Science Collaborative has created a guide to steer you through this process in the next section of this document. LOIs are due by 1 PM EST (1300 hours) on March 1, 2010. Applicants are required to submit a Letter of Intent to be eligible to submit a full proposal.

Step 3: The Science Collaborative will review your Letter of Intent and offer feedback by March 15, 2010. All applicants who submit a complete Letter of Intent will receive feedback, and have the option to submit a full proposal.

Step 4: Develop and submit a full proposal. The deadline for receipt of full proposals by the Science Collaborative is 1 PM EST (1300 hours) on May 6th, 2010.

Step 5: Complete full proposals will be peer reviewed by at least three experts in the field of the proposed project. Applicants will have the opportunity to respond to reviewer comments in the form of a short rebuttal in late June 2010.

Step 6: A multidisciplinary panel of intended users, collaborative research experts, and scientists in appropriate disciplines will review each full proposal, attendant peer reviews, and the rebuttal, and then make recommendations for funding. Applicants will be notified of the outcome of the panel's recommendations via email in early August 2010. Funded projects will begin September 1, 2010.

VII. Letter of Intent Preparation & Submission

Applicants are required to submit a complete Letter of Intent (LOI) to be eligible to submit a full proposal. The LOI's purpose is to provide an opportunity for the Science Collaborative to inform applicants as to whether or not they are on the right track toward development of a competitive full proposal.

The LOI's narrative content is a subset of what you will be required to submit as part of your full proposal narrative. Therefore, in developing your letter, it is important to understand the larger context of this funding opportunity by reading the Full Proposal Preparation guide and the Collaborative Approach to Science Primer in this document.

Please use the Letter of Intent form available at www.nerrs.noaa.gov/RCDefault.aspx?ID=612 to draft your letter. LOIs must address all items listed below in order for applicants to receive feedback and have the option to submit a full proposal. If applicants do not address every narrative component, the Science Collaborative will be unable to offer feedback on the development of a full proposal. LOIs may not exceed four pages (one title page and three narrative pages).

A. Title page (one-page limit) must include the following:

- Project title
- Project Investigator (PI) name, institution, and contact information
- NERRS site(s) involved in the proposal
- Project duration: one, two, or three years
- Estimated total budget for project

B. Letter of Intent Narrative (three-page limit) must include the following:

1. Coastal Management Problem & Approach
Describe the coastal management problem you propose to address and provide evidence for it being a priority issue for the Reserve(s) involved in the proposal. Describe the connection to at least one of the RFP focus areas: impacts of land use change; habitat change and restoration; estuarine contamination; and management of stormwater and nonpoint source pollution. Given that coastal management problems related to these focus areas often are exacerbated by climate change, your description may take climate change factors into account, as appropriate.

2. Project Objectives
State your project's objectives. For the purpose of this RFP, "objective" is defined as an accomplishment essential to addressing the identified problem. This is not intended to be a chronological or comprehensive list of project activities, but an outline of those accomplishments that you anticipate will lead to the most significant results of the project.

3. Intended Users & Anticipated Use
Identify the intended users of project results and justify this choice. It is not necessary to name the intended users in the Letter of Intent. Rather, describe their organization(s) and professional responsibilities. Then describe how the identified intended users will apply the results of this project to make decisions related to the coastal management problem you have identified.

4. Methods
Briefly describe how the information required to accomplish project objectives will be collected and analyzed. Methods can involve social, natural, and/or physical science methodology. See the glossary on page 15 for our definition of social science.

5. Integration of Project Participant Perspectives
Briefly describe how you will integrate the perspectives of project participants, which includes investigators and intended users of project results, throughout the course of the project. See the Collaborative Approach to Science Primer (pages 15–18) for resources on how to respond to this section.

6. NERRS Involvement
Describe how NERRS staff will be involved in the development of the full proposal.

C. Letter of Intent Submission

The deadline to submit your Letter of Intent to the NERRS Science Collaborative is 1 PM EST (13:00 hours) on March 1, 2010. Your LOI must be in the form of one electronic PDF file. LOIs sent in any other file format and those submitted after the submission deadline will not be accepted. Send your Letter of Intent as an email attachment to submissions@nsc.unh.edu. In addition, please send one signed hard copy of your Letter of Intent postmarked no later than March 8, 2010, to the NERRS Science Collaborative's Program Coordinator:

Cindy Tufts
Gregg Hall, Room 130
35 Colovos Road
Durham, NH 03824

D. Feedback Process

The Science Collaborative will provide feedback on all complete Letters of Intent via email on March 15, 2010. This feedback is meant to provide guidance to strengthen the applicant's full proposal. If you decide not to submit a full proposal, please inform the Science Collaborative via email by 5 PM EST (17:00 hours) on March 29, 2010.

The Science Collaborative will provide feedback on LOI narrative components 1 through 6. This feedback will address whether we think a narrative component should be strengthened or clarified in the full proposal. The feedback will consist of one to two sentences that address each component of the narrative. If you are unsure how to address a recommendation we encourage you to re-read the Full Proposal Preparation guide and the Collaborative Approach to Science Primer closely and consult with your team. If you still have questions, please contact us by email.

VIII. Full Proposal Preparation

The following section provides guidance on how to submit a full proposal to this funding opportunity. Please follow the instructions below. Full proposals that do not address every narrative requirement in the proper order, or fail to include any of the required components (A-K), will be deemed "incomplete" and eliminated from the competition. The applicant will be notified. Each proposal must include the following:

A. Title Page
B. Abstract
C. Full Proposal Narrative
D. Budget Justification
E. Letters of Commitment from Intended User(s)
F. Literature Cited
G. Qualifications
H. Budget Forms
I. Reference Map
J. NERRS Reserve Manager Letter of Commitment
K. Checklist of Proposal Components
L. Suggested Reviewers (optional)

For guidance only

For guidance purposes, relevant review criteria will appear in a box like this in each section of the narrative to help applicants understand how reviewers will evaluate that component. A complete list of proposal review criteria is on pages 14–15.

A. Title Page

Title pages must be in a standard format, using the Title form at www.nerrs.noaa.gov/RCDefault.aspx?ID=612

B. Abstract (one-page limit)

On a separate page, provide a one- to two-paragraph abstract summarizing the salient points of your proposal, including a short description of the coastal management problem addressed by your proposal, a brief project overview, anticipated benefits to intended users, and methods to achieve the project's objectives.

C. Full Proposal Narrative (18-page limit)

Narratives are not to exceed 18 single-spaced pages with one-inch margins. Applicants must use the Full Proposal Narrative form at www.nerrs.noaa.gov/RCDefault.aspx?ID=612, which includes the following sections:

1. Coastal Management Problem & Approach
2. Project Objectives
3. Intended Users & Anticipated Use
4. Methods
5. Integration of Project Participant Perspectives
6. Roles & Responsibilities
7. NERRS Involvement
8. Timeline

1. Coastal Management Problem & Approach

Problem Definition
Describe the coastal management problem your project seeks to address. Please provide evidence that the problem you have identified is a priority issue at the Reserve(s) involved in the proposal and the local communities they serve.

Current Approaches to Address the Problem
Describe current approaches to address the defined problem and the most critical barriers that prevent these approaches from successful application. Address research and technology gaps, as well as barriers related to the problem's human dimensions, such as capacity, politics, economics, institutional organizations, and cultural values. Then provide a brief overview of the approach your project would take to address the problem and how it might overcome these barriers. Any detailed steps to develop and implement this approach should be described in the Methods section on page 9.

Addressing an RFP Focus Area
Describe how the coastal management problem you describe is related to at least one of the following focus areas for this RFP: impacts of land use change; habitat change and restoration; estuarine contamination; and management of stormwater and nonpoint source pollution. Given that coastal management problems related to these focus areas often are exacerbated by climate change, your description may take climate change factors into account, as appropriate.

Physical and Social Context
Describe the location in which the project will take place. Include relevant natural science (e.g., biological, physical) and social science (e.g., economic, political, regulatory) information.

For guidance only

Relevant review criteria for Coastal Management Problem & Approach section:
To what extent is the coastal management problem described in the proposal appropriate with regard to the stated focus areas for this RFP?

To what extent have the applicants demonstrated that the described problem is a priority issue at the Reserve(s) involved in the proposal and the local communities they serve?

How well does the proposal demonstrate an understanding of the barriers to the successful implementation of current approaches? Does the proposed approach address those barriers?

2. Project Objectives

Please state your project's objectives and describe how they meet the goal of this funding opportunity (page 3). For the purpose of this RFP, "objective" is defined as an accomplishment essential to addressing the described problem. This is not intended to be a chronological or comprehensive list of project activities, rather an outline of your project's most significant objectives.

For guidance only

Review criteria for Project Objectives section
Are the objectives clearly articulated and appropriate to the goals of the RFP?

Are the objectives appropriate to the identified coastal management problem and the duration of the project?

3. Intended Users & Anticipated Use

Intended Users
Please identify the intended users of project results. Justify these choices. It is not necessary to name the intended users in this part of the proposal. Rather, describe their organization(s) and professional responsibilities.

Corroboration of Coastal Management Problem
Describe the steps you have taken before and during the proposal writing process to corroborate your understanding of the identified coastal management problem and the viability of your approach with intended users.

Intended user interactions during the proposal writing process do not have to be formal and could come in the form of one-on-one conversations, workshops, workshop proceedings, existing needs assessments, or reports. Please include citations where appropriate.

Anticipated Use
Describe how the identified intended users will access and use the results of this project to make decisions related to the coastal management problem you have identified.

Be as specific as you can in describing how and when you expect project results to be used. Please include examples that illustrate how this research will benefit intended users.

For guidance only

Relevant review criteria for Intended Users & Anticipated Use section
To what extent do the applicants identify appropriate intended user organizations for the identified problem and proposed approach to addressing it?

Does the proposal include sufficient evidence that the applicants have confirmed their understanding of the nature of the problem and their proposed approach with intended users?

Have applicants clearly shown how project results can be employed by intended users?

4. Methods

Methods can involve social, natural, and/or physical science techniques. See the glossary on page 15 for our definition of social science.

Data Collection and Analysis
Please describe how the data required to accomplish project objectives will be collected and analyzed. Provide a clear description of scientific methods and procedures with enough detail for reviewers to evaluate the technical feasibility and scientific merit of the proposed activities, as well as the suitability of the methods to realize project objectives.

Connecting Findings to Intended User Decisions
Please describe how you will examine the significance of findings and how these findings may support intended user decisions related to the identified problem. Your description should, at a minimum, address how you will examine your initial assumptions and the level of uncertainty related to your approach.

Communication of Results
Please describe and justify the anticipated strategy for communicating (packaging and delivering) project results to organizations represented by the intended users you have identified.

For guidance only

Relevant review criteria for Methods section
To what extent are the methods technically feasible?

To what extent are the methods appropriate to meet the stated objectives?

Do the proposed methods demonstrate appropriate technical capability and familiarity with the scientific subject matter?

Have applicants described an appropriate method to examine the significance of findings, and how these findings may support intended user decisions related to the identified problem?

Have the applicants described an appropriate communications strategy given the problem being addressed?

5. Integration of Project Participant Perspectives

Describe how you will vet critical aspects of the project with all project participants, which includes investigators and intended users of project results. For the purpose of this RFP, "vetting" is defined as the process by which intended users will have prescribed opportunities to ask questions and provide input throughout the span of the project. Vetting should not to be confused with less formal and less extensive efforts to engage intended users that occurred while writing this proposal.

The Science Collaborative recognizes that vetting may lead to changes in the implementation of projects funded by this program. As with any research project, major changes to the research plan or objectives would have to be communicated to the Science Collaborative to amend work plans and address resulting administrative issues.

At a minimum, your description should answer the following questions:

- Which, and approximately how many, project participants will be involved in the vetting process?
- How often will project participants meet throughout the project?
- What kind of ground rules do you anticipate using for decision-making among project participants?
- How will disagreements among project participants be resolved?
- How will input be incorporated at various stages of the project?

For guidance only

Relevant review criteria for Integration of Project Participant Perspectives section:
To what extent are the plans for integration of project participant perspectives feasible?

To what extent are the plans for integration of project participant perspectives appropriate for the coastal management problem to be addressed, as well as for the participants?

To what extent do the proposed plans for integration of project participant perspectives demonstrate capability and familiarity with collaborative methods?

6. Roles & Responsibilities

All proposals must identify investigators who can fulfill the following roles associated with the project:

Principal Investigator (PI)
The PI represents the institution, agency, or friends group that will have overall administrative responsibility for the project. He or she may fill any additional role(s) on the project. Please identify the project PI. Describe their role on the project and the skills and experience that justify your choice.

Integration Lead
The Integration Lead balances the perspectives of the researchers and intended users throughout the project. Considering this person's role in balancing these perspectives, we recommend that he or she be someone other than a researcher or intended user on the project (Jacobs 2002, National Research Council 2006).

Examples of Integration Lead responsibilities include: helping to determine the composition of the project participant group; setting ground rules for group meetings; determining the best method to ensure that all project participants have equal opportunity to provide input (e.g., Will a neutral facilitator be used for meetings?); identifying the best method to ensure that all input is treated equally; evaluating feedback from all project participants; and helping to determine whether mid-course corrections are necessary.

Please identify the Integration Lead on the project. Describe their role on the project and the skills and experience that justify your choice.

Other Investigators
If applicable, identify additional investigators required to meet project objectives. Describe their roles and responsibilities on the project and the experience and skills that make each an appropriate choice.

Intended Users
Please identify a minimum of one intended user of project results who can represent his or her organization throughout the project. Attach a Letter of Commitment from each identified intended user; see page 12 for guidance on this. Intended users may be compensated for their time. While this is not required, it is allowed.

We anticipate that projects will vary in terms of the number of intended users they involve, and that this number will likely change throughout the project. Intended users identified in this section are not necessarily meant to be the only ones who participate in the vetting processes described in "Integration of Intended User Perspectives." Applicants are NOT expected to identify all the intended users that may participate in the vetting processes in this proposal.

For guidance only

Relevant review criteria for Roles & Responsibilities section:
Do the investigators filling the roles listed (PI, other investigators, and Integration Lead) possess the skills, experience, and qualifications to fill their roles?

Are there skill sets missing in terms of meeting the objectives of the project? If so, please describe.

To what extent do the identified intended users have the skills and level of decision-making authority necessary to implement project results?

7. NERRS Involvement

A collaborative approach to science requires a range of skills and expertise. Since most Reserves have staff with expertise in research, decision maker training, education, and stewardship, this RFP is an opportunity to integrate these resources and more effectively link science to decision making. Describe the extent to which NERRS staff (sector leads and others) were engaged in the development of this proposal and any plans to include them in project implementation. This description must be accompanied by a Letter of Commitment from the manager of the Reserve(s) involved in the project; see page 12 for guidance on this.

For guidance only

Relevant review criteria for NERRS Involvement section:
To what extent have applicants engaged staff at participating Reserve(s) in proposal development?

Did applicants include a Letter of Commitment from the manager of each Reserve involved in the proposal?

8. Timeline

Provide a timeline that identifies discrete products and activities that signify progress toward project objectives, using the Timeline form at www.nerrs.noaa.gov/RCDefault.aspx?ID=612

The following sections, "D" through "L", are not included in the 18-page narrative limit.

D. Budget Justification

Provide a detailed budget justification that explains each item in your cumulative Budget form, including salary, tuition, subcontracts, fringe benefits, equipment, supplies, travel, and indirect costs. Describe the time commitment and budget for each person listed in "Roles and Responsibilities." Investigators from institutions other than that of the PI must be listed as subcontractors on the budget form and their activities explained in the budget justification.

For guidance only

Relevant review criteria for Budget Justification section:
Is the budget appropriate for the project's objectives and scope?

Have resources been adequately allocated to all critical components of the proposal?

E. Letters of Commitment from Intended Users

These letters should include a description of the intended user's affiliation and decision-making capacity as it relates to the identified coastal management problem. How will this project increase their capacity, or the capacity of their organization, to address the identified problem? What are they committed to doing on the project? What are their expectations in return for that commitment?

F. Literature Cited

Please include a complete list of all literature cited in the proposal.

G. Qualifications

Please include a *curriculum vitae*, résumé, or professional narrative (maximum length of two pages) for each project participant mentioned in "Roles and Responsibilities."

H. Budget Forms

You must submit one Budget form for each year of your project, as well as a cumulative Budget form. Also, please include a separate, detailed Budget form for each subcontractor labeled "Subcontractor: name of individual and affiliation." A Budget form that can be used for all of these purposes is available at www.nerrs.noaa.gov/RCDefault.aspx?ID=612

I. Reference Map

Please include a reference map of the site and surrounding watershed where the work will take place. The image of the map may not exceed one page. Limit text on this page to the identification of locations and a legend, if applicable.

J. NERRS Reserve Manager Letter of Commitment

Applicants must include a letter from the manager of each Reserve involved in the project. The purpose of the letter is to describe the level of NERRS involvement in the project and to corroborate that the Reserve manager is aware of his or her staff's commitment to achieve the proposed objectives of the project.

This letter is not intended to evaluate the quality of the proposed project. The Science Collaborative requires all Letters of Commitment be in a standard format, a template for which is available at www.nerrs.noaa.gov/RCDefault.aspx?ID=612

K. Checklist of Proposal Components

Please use the Checklist of Proposal Components, available at www.nerrs.noaa.gov/RCDefault.aspx?ID=612, to identify and include all required components of the proposal. Submit your checklist with your proposal. Proposals that do not include all the items on the list will be deemed incomplete and will not undergo further review. Applicants will be notified if proposals are deemed incomplete.

L. Suggested Reviewers (Optional)

You may include a list of reviewers you believe to be especially well qualified to review the proposal. You also may designate individuals you would prefer not review the proposal, indicating why. These suggestions are optional. The Science Collaborative will consider them and may contact you for more information. However, the decision of whether or not to use your suggestions is at the discretion of the Science Collaborative.

IX. Full Proposal Submission

The deadline for receipt of your proposal by the NERRS Science Collaborative is 1 PM EST (1300 hours) on May 6th, 2010. This initial submission must be in the form of one electronic PDF file; proposals sent in any other file format will not be accepted. Please send your proposal as a single PDF file to submissions@nsc.unh.edu.

You must also mail one signed, hard copy of your proposal, postmarked no later than May 13th, 2010. Please mail this to the NERRS Science Collaborative Program Coordinator:

Cindy Tufts
Gregg Hall, Room 130
35 Colovos Road
Durham, NH 03824

X. Full Proposal Evaluation

All full proposals will undergo an initial review to make sure they are complete. Incomplete proposals will be eliminated from the competition without further review and the applicants will be notified. Failure to do one or more of the following will result in a proposal being deemed "incomplete":

- Follow the full proposal narrative structure as outlined;

- Include all required information, such as responses to all sections of the full proposal narrative, *curriculum vitae,* budget forms, letters of commitment, timeline, NERRS manager letters, etc.;

- Follow directions with regard to formatting and submission procedures.

Complete proposals will undergo a written peer review. Peer reviewers will be selected based on their expertise in collaborative research and the specific subject areas of each proposal. Applicants will have the opportunity to read and respond to the peer reviews in the form of a short rebuttal.

Finally, a multidisciplinary panel of intended users, scientists in appropriate disciplines, and collaborative research experts will review each full proposal, attendant peer reviews, and the rebuttal, and then make recommendations for funding to the Science Collaborative.

Projects recommended for funding are subject to National Environmental Policy Act (NEPA) review regarding the environmental impacts of the proposed activities. Funding is contingent upon compliance with NEPA guidelines. Learn more about NEPA at www.epa.gov/compliance/nepa.

Reviewers will evaluate proposals using the criteria on pages 14–15, which will be weighted as follows:

- Coastal Management Problem & Approach, Objectives, Intended Users & Anticipated Use: 15%
- Methods, Integration of Project Participant Perspectives: 50%
- NERRS Involvement: 20%
- Roles & Responsibilities: 10%
- Budget: 5%

Review Criteria

Coastal Management Problem & Approach

To what extent is the coastal management problem described in the proposal appropriate with regard to the stated focus areas for this RFP?

To what extent have applicants demonstrated that the described problem is a priority issue for the Reserve(s) involved in the proposal and the local communities that they serve?

How well does the proposal demonstrate an understanding of the barriers to the successful implementation of current approaches? Does the proposed approach address those barriers?

Project Objectives

Are the objectives clearly articulated and appropriate to the goals of the RFP?

Are the objectives appropriate to the identified coastal management problem and the duration of the project proposed?

Intended Users & Anticipated Use

To what extent do the applicants identify appropriate intended user organizations for the identified problem and proposed approach to addressing it?

Does the proposal include sufficient evidence that applicants have confirmed their understanding of the nature of the problem and their proposed approach with intended users?

Have applicants clearly shown how project results can be employed by intended users?

Methods

To what extent are the methods technically feasible?

To what extent are the methods appropriate to meet the stated objectives?

Do the proposed methods demonstrate appropriate technical capability and familiarity with the scientific subject matter?

Have applicants described an appropriate method to examine the significance of findings, and how these findings may support intended user decisions related to the identified problem?

Have the applicants described an appropriate communications strategy given the problem being addressed?

Integration of Project Participant Perspectives

To what extent are the plans for integration of project participant perspectives feasible?

To what extent are the plans for integration of project participant perspectives appropriate to the coastal management problem to be addressed, as well as to the project participants?

To what extent do the proposed plans for integration of project participant perspectives demonstrate capability and familiarity with collaborative methods?

Roles & Responsibilities

Do the investigators filling the roles of PI, other investigators, and Integration Lead possess the skills, experience, and qualifications to fill their roles?

Are there skill sets missing in terms of meeting the objectives of the project? If so, please describe.

To what extent do the identified intended users have the skills and level of decision making authority necessary to implement project results?

NERRS Involvement

To what extent have applicants engaged staff at participating Reserve(s) in proposal development?

Did applicants include a Letter of Commitment from the manager of each Reserve involved in the proposal?

Budget Justification

Is the budget appropriate for the project's objectives and scope?

Have resources been adequately allocated to all critical components of the proposal?

XI. Glossary of Terms

Collaborative Approach to Science: A process that integrates intended users of the science in the development of the proposal and implementation of the project.

Credibility: The extent to which the project results are perceived by intended users as meeting acceptable standards of scientific plausibility and technical quality.

Decision-Maker: Individuals or organizations that are responsible for selecting a course of action that directly impacts coastal management problems.

Intended users: Individuals or organizations most likely to use the results of the project to address the specified coastal management problem. Depending on the project, this could include those with a direct financial, personal, professional, regulatory, or legal interest in the problem or those who would be instrumental in facilitating or preventing the use of project results.

Legitimacy: The extent to which intended users perceive the research process itself as unbiased and meeting standards of political and procedural fairness.

Relevance: The extent to which the information is meaningful for—and could be used by— intended users, given the logistical constraints they face, such as budget, levels of scientific uncertainty associated with results, and timing of results.

Social Science: The branch of science that studies society and the relationships of individuals within a society. In the environmental context, social science is especially important in understanding the key human participants, the parts they play in the ecosystem, and their specific needs for information (form and content).

Vetting: The process by which intended users have prescribed opportunities to ask questions and provide input throughout the span of a project.

XII. Collaborative Approach to Science Primer

Rationale for the Collaborative Approach

The NERRS Science Collaborative seeks to fund collaborative, science-based projects to address coastal management problems in communities served by NERRS sites.

Our program's dual emphasis on quality science and formal collaborative methods is motivated by a growing body of evidence indicating that if the goal is to link science to decision making, it is not enough to conduct rigorous science (National Research Council (NRC) 1995; Lubchenco 1998; Urban Harbors Institute 2004; United States Commission on Ocean Policy Report (USCOP) 2004; McNie 2007; Dreelin and Rose 2008). At the same time, there is a growing consensus that integrating intended users into the research process enhances the connection of project results to decision making (Cash et al. 2003; Jacobs 2003; NRC 2006).

These conclusions have been corroborated by the experiences of NERRS Science Collaborative staff members, who have managed coastal science funding programs since 1998. We have devoted a significant amount of time studying the impacts and outcomes of projects we have funded and case studies of others. Based on our experience and the literature, we believe that projects with the strongest chance of connecting science to decision making have the following characteristics:

- Investigators involve intended users of project results in the problem at every critical stage of the project;

- The project team has allocated appropriate resources to manage the interactions between investigators and intended users;

- The project team, including subcontractors, has the appropriate expertise to manage interactions and balance perspectives between researchers and intended users.

In our review of projects we have funded, we also heard from project investigators and intended users of their work who believe that funding opportunity programs are in a unique position to encourage the above characteristics. This knowledge informed the design of the NERRS Science Collaborative itself, and its FY 2010 Funding Opportunity.

Given that the use of a formal collaborative approach to the conduct of science may be unfamiliar to some applicants, we have developed this primer as a resource. We encourage anyone with questions about this document or this RFP to contact us by email.

Common Collaborative Approaches

There are several formal collaborative approaches to the conduct of science. The following models have been applied effectively to address coastal management problems. While there are subtle differences to these approaches, all provide explicit mechanisms to integrate a variety of perspectives, including those of project investigators and intended users, at critical stages of the project. You are not obligated to use these approaches in your proposal. Rather, they are provided as examples to illustrate the level of rigor that reviewers will expect you to apply to collaborative processes.

Consensus Building
web.mit.edu/dusp/epp/music/pdf/JFF_KeySteps.pdf

Collaborative Learning Model
oregonstate.edu/instruct/comm440-540/CL2pager.htm

Structured Decision Making
www.structureddecisionmaking.org/steps.htm

Scaling Your Collaborative Approach

The NERRS Science Collaborative expects that the resources and expertise a proposal allocates to collaborative processes will depend on the identified coastal management problem, the project's objectives, the number of intended users, and the funding and time at the applicants' disposal. While the literature indicates that increasing the number of project participants usually increases the utility of research results, we recognize the need to scale collaborative

processes so that they are effective and achievable given available resources. As part of that process, applicants will need to determine the number of project participants, how frequently they will interact, and the resources needed to ensure that these interactions meets standards of procedural fairness. It is critical that these questions are answered by someone with experience convening and supervising interactions between researchers and a variety of intended users, i.e., your Integration Lead.

Finding A Qualified Integration Lead

The Integration Lead (described on page 10) provides the important functions of balancing the perspectives of all project participants and ensuring that everyone involved feels the process was as fair as possible. Cash et al. 2002 notes that without "legitimacy"—the trust that the research process adhered to standards of procedural fairness—even the best science often goes unused.

The right person for this role will have experience acting as a bridge between researchers and intended users. Required skills include project management, communication, facilitation, needs assessment, and evaluation. Considering this person's role in balancing researcher and intended user perspectives, we recommend that the Integration Lead not be an intended user or someone engaged in the research (Jacobs 2002, NRC 2006).

It may be that applicants will have access to the right person on staff at the Reserve associated with their proposal. If that is not the case, consider staff from Land Grant or Sea Grant Extension, Non-Point Education for Municipal Officials (NEMO), and the National Estuary Program, or faculty associated with university or college programs.

In addition, below is a list of organizations that provide relevant services. This list was created to provide examples only; the Science Collaborative does not endorse the services of these organizations above others:

• RTI International
Contact: www.rti.org
Molly O'Donovan Dix; 603-672-9051; dix@rti.org

• Consensus Building Institute
Contact: www.cbuilding.org

• RESOLVE
www.resolve.org

• CONCUR, Inc.
www.concurinc.com/index.html

• The Keystone Center
www.keystone.org

Below are links to lists of organizations that may have staff members with the necessary skills for the Integration Lead role.

• conflict.uoregon.edu/resources

• www.lincolninst.edu/subcenters/resolving-land-use-disputes/learn-more/links.asp

Articles that May Prove Helpful

These articles that may be helpful in planning your collaborative approach:

Jacobs, K.L. 2002. *Connecting Science, Policy and Decision-Making: A Handbook for Researchers and Science Agencies*, National Oceanic and Atmospheric Administration, Office of Global Programs, Silver Spring, Maryland.

Cash, D.W., W.C. Clark, F. Alcock, N.M. Dickson, N. Eckley, J. Jager, and R.B. Mitchell. 2002. Salience, credibility, legitimacy and boundaries: linking research, assessment and decision making. John F. Kennedy School of Government, Harvard University, Faculty Research Working Paper Series.

Literature Cited in this Primer

Cash, D.W., W.C. Clark, F. Alcock, N.M. Dickson, N. Eckley, J. Jager, and R.B. Mitchell. 2002. Salience, credibility, legitimacy and boundaries: linking research, assessment and decision making. John F. Kennedy School of Government, Harvard University, Faculty Research Working Paper Series.

Cash, D.W., W.C. Clark, F. Alcock, N.M. Dickson, N. Eckley, D.H. Guston, J. Jager, and R.B. Mitchell. 2003. Knowledge systems for sustainable development. *Proceedings of the National Academy of Sciences.* 100:8086-8091.

Dreelin, E.A., J.B. Rose. 2008. Creating a dialogue for effective collaborative decision-making: a case study with Michigan stakeholders. *Journal of Great Lakes Research*. 34:12-22

Jacobs, K.L. 2002. *Connecting Science, Policy and Decision-Making: A Handbook for Researchers and Science Agencies*, National Oceanic and Atmospheric Administration, Office of Global Programs, Silver Spring, Maryland.

Lubchenco, J. 1998. Entering the century of the environment: a new social contract for science. *Science.* 279 (5350): 491 –4976.

McNie, E.C. 2007. Reconciling the supply of scientific information with user demands: an analysis of the problem and review of the literature. *Environmental Science and Policy.* 10: 17-38.

National Research Council (NRC). 1995. Science, Policy and the Coast—Improving Decision Making. National Academies Press, Washington, D.C.

National Research Council (NRC). 2006. Linking knowledge with action for sustainable development: The role of program management—summary of a workshop. Roundtable on Science and Technology for Sustainability. National Academies Press, Washington, D.C.

Urban Harbors Institute. 2004. Improving links between science and coastal management: results of a survey to assess science and technology needs. Draft Report for the Coastal States Organization. www.uhi.umb.edu/pdf_files/FINAL_surveyreport_1004.pdf

U.S. Commission on Ocean Policy (USCOP). 2004. An Ocean Blueprint for the 21st Century. Final report. Washington D.C. http://oceancommission.gov

XIII. More on Intellectual Property Protection

In some instances, commercialization is the most efficient means of disseminating knowledge or technology. In others cases, a non-commercial approach may be more appropriate. Since the dissemination pathway is often not clear at the outset of a project, the NERRS Science Collaborative strongly suggests that you take the following steps to protect your technology's intellectual property at the proposal stage. By doing this, you will be able to talk freely about your invention and avoid the inadvertent loss of intellectual property rights.

Step 1: Take steps to protect your intellectual property as soon as possible so that you can discuss your research with colleagues in a manner that does not restrict your ability to choose the most appropriate dissemination path.

Step 2: Do not make assumptions about the commercialization value of your work. In our experience, researchers often make assumptions about the intellectual property process that are inaccurate.

Step 3: Talk to your institution's Office of Technology Transfer or its Office of Intellectual Property. Determine the proper approach to intellectual property protection for your technology. This discussion could include any of the following topics: prior-art research and determination of patentability; pursuit of "confidential and proprietary information"; pursuit of copyright; or the viability of no intellectual property protection steps whatsoever.

Step 4: The title page you will submit with your proposal comes with a confidentiality statement. Please review it and contact us with any questions.

Step 5: Until talking with one of the specialists recommended in Step 3, do not disclose your idea in a public setting. "Disclosure" entails giving enough information—verbally or in written/graphic form—for a person "skilled in the art" to reproduce your invention.